

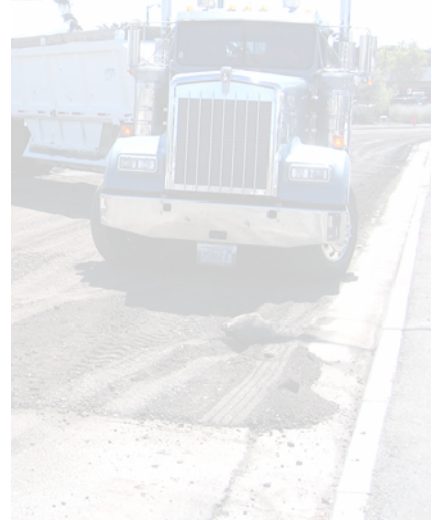
# MONTANA DEPARTMENT OF TRANSPORTATION

## HIGHWAY PROJECT COST ESTIMATING AND MANAGEMENT (HPCE)



CONTRACT#: 308059, RESEARCH PROJECT#: 8189

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## INTRODUCTION

Sierra Transportation Engineers, Inc. (STE) is pleased to provide its sixth monthly progress report for Montana Department of Transportation (MDT) contract number 308059, titled "Highway Project Cost Estimating and Management (HPCE)." This monthly progress report covers the period August 1, 2007 to August 31, 2007.

The overall objective of this project is to develop a comprehensive document to determine the best practice of efficient highway cost estimating for Montana. Upon completion of this research, recommendations are to be made for improvements to the current cost estimation process.

The specific tasks identified in the project work plan are:

- Task 1 - MDT's Structure, Operations, and Current Process
- Task 2 - Critical Review of NCHRP 8-49 Literature Review
- Task 3 - Recommendations
- Task 4 - Consultant Visits and Schedule
- Task 5 - Develop Detailed Strategic Procedure
- Task 6 - Implementation Plan

The following paragraphs describe the work accomplished during this reporting period under each task.

## TASK 1 – MDT'S STRUCTURE, OPERATIONS, AND CURRENT PROCESS

During this reporting period, STE continued its efforts on understanding MDT's current structure, operations and procedures for cost estimation. A draft data request template called MDT HPCE data request template was created using MS Excel spreadsheets. STE provided an electronic copy of the template to MDT for review and comment on April 13, 2007. STE worked closely with the MDT Project Manager and Project Panel to customize the data request template to follow MDT practices. On July 3<sup>rd</sup>, 2007 STE finalized and submitted the data request template to MDT. The data request template will be used to provide project cost data to STE on at least 10 (and preferably 20) MDT projects. STE has requested data on projects of different types, categories, and from different districts. STE also asked for projects that were under, over, and close to the original base cost.

Also during this reporting period, STE developed and submitted a series of questions and a survey to be filled out by MDT personnel from various departments, who will be interviewed by STE during the upcoming September visit. The main objective of these interviews is to capture how each of MDT's groups deal with the unknown uncertainties (risks) during a life span of a project. The focus is on learning how each individual group changes project cost or schedule when confronted with previously unaccounted project events. STE sent a document containing a set of questions for each group or individuals and a write-up on project goals and objectives (i.e., what STE is planning to achieve) for distribution to all interviewees. STE also reviewed the MDT response to its pre-trip questions and survey for different project stages to MDT. The different stages of the project include: planning, programming, advanced planning/preliminary design, final design, ad/bid/award, and construction.

MDT Project Manager has scheduled a series of interviews during the week of September 17, 2007 to be conducted in Helena.

***Worked planned for next month***

STE will continue reviewing the current MDT structure, operations, and processes. STE will conduct interviews with MDT personnel involved with the cost estimation process during the week of September 17, 2007. The results of interviews will greatly assist STE in developing recommendations and a new strategic procedure for cost estimation.

## **TASK 2 – CRITICAL REVIEW OF NCHRP 8-49 LITERATURE REVIEW**

During this reporting period, STE continued its review of NCHRP Report 574, "Guidance for Cost Estimation and Management for Highway Projects During Planning, programming, and Preconstruction." STE is utilizing the NCHRP 8-49 findings in developing questionnaires for its upcoming interviews with MDT personnel. STE has assembled its literature review findings in a draft document that will be included in its interim report to MDT.

***Worked planned for next month***

STE will continue reviewing the NCHRP 8-49 report and its literature review of various state agencies across the United States.

## **TASK 3 – RECOMMENDATIONS**

Information gathered from pre-trip questions and surveys along with the ongoing literature review is being used to develop the framework for project recommendations. During this reporting period, STE continued the evaluation of Monte Carlo simulation software namely Crystal Ball and also @RISK for possible use as risk analysis tools on the upcoming data from MDT.

***Worked planned for next month***

STE will continue the evaluation of Monte Carlo simulation software for possible use as risk analysis tools on MDT data. Based on the knowledge gained from the upcoming interviews and a review of current programs used by MDT personnel for cost estimation, STE will formulate its recommendations for enhancing the current MDT cost estimation procedures.

## **TASK 4 – CONSULTANTS VISITS AND SCHEDULE**

During this reporting period, STE worked with MDT project manager to identify interviewees for its upcoming visit. MDT Project Manager has set interview times for the week of September 17, 2007 with numerous MDT personnel involved in various phases of project development.

***Worked planned for next month***

Consultant visit will occur during the week of September 17, 2007.

## **TASK 5 – DEVELOP DETAILED STRATEGIC PROCEDURE**

No work was scheduled nor conducted for this task during this reporting period. However, the scope of activities under this task was thoroughly discussed with the MDT project panel during the kick-off meeting.

*Worked planned for next month*

No activity planned.

## **TASK 6 – IMPLEMENTATION PLAN**

No work was scheduled nor conducted for this task during this reporting period. However, the scope of activities under this task was thoroughly discussed with the MDT project panel during the kick-off meeting.

*Worked planned for next month*

No activity planned.

## **PROJECT SCHEDULE AND FINANCIAL SUMMARIES**

Figure 1 shows the project expenditures versus planned budget for each task. Figure 2 represents the cumulative project expenditures versus budget for the entire project to date.

All project activities are per schedule and the project is within planned budget. STE does not foresee any problems to report.

Figure 1. Expenditures Versus Planned Budget for Each Task

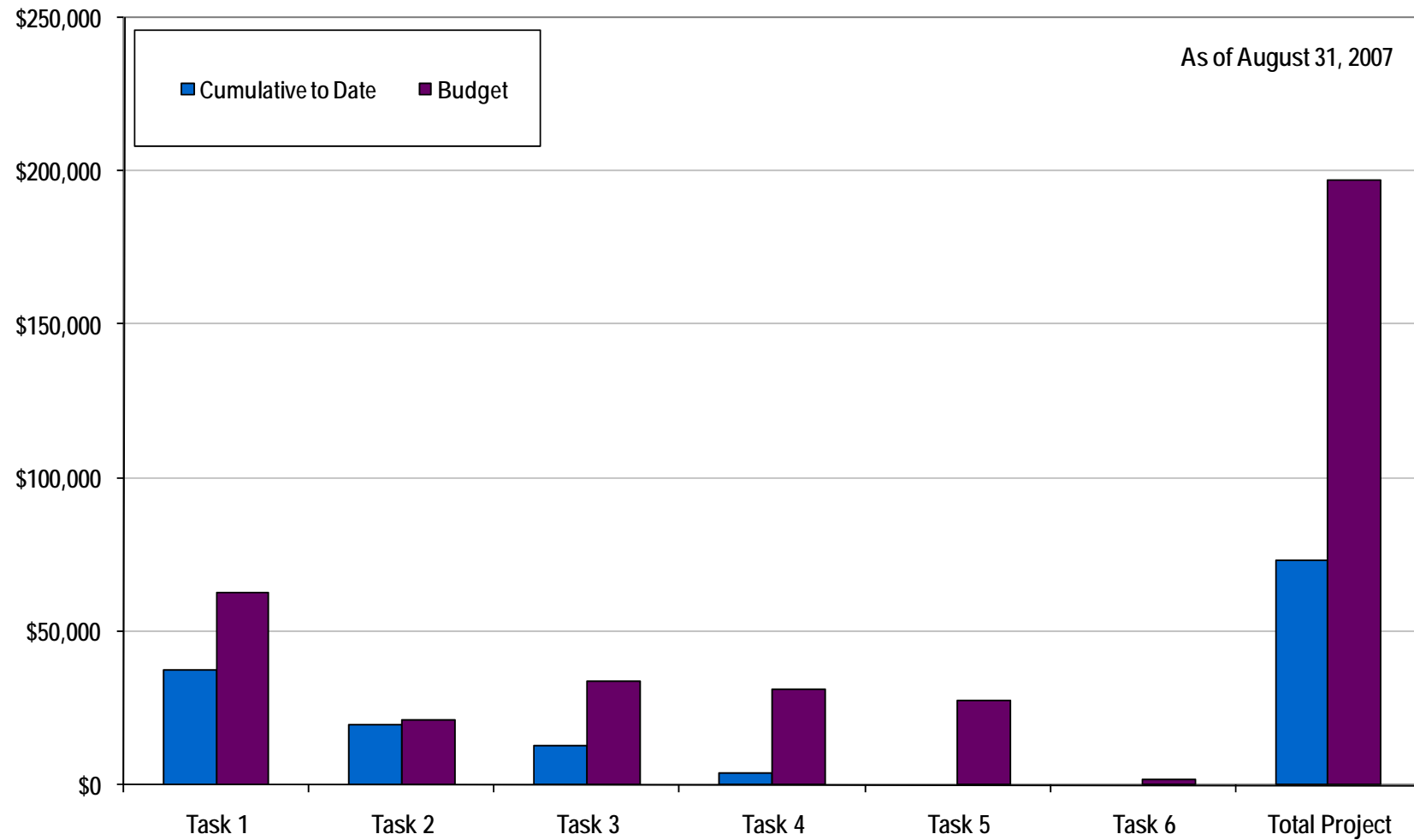


Figure 2. Cumulative Expenditures Versus Budget

